

## WILDLIFE RELATED RECREATION: URBAN AND RURAL PERCEPTIONS IN OKLAHOMA

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### Abstract

This paper investigates whether self-classified urban and rural residents differ in their demographics, interests, experiences, and perceptions of wildlife-related recreation by employing *t*-test and chi-square statistical analysis. The data used in this analysis were taken from surveys facilitated at the annual ODWC Wildlife Expo in Oklahoma from 2010-2012. A total of 1162 individuals participated in the surveys, including 511 urban residents and 651 rural residents. Urban-rural differences were found in respondents' interests related to hunting and their experience related to hunting and fishing; however, differences were not shown in shooting sports and wildlife watching. This study also revealed differences between urban and rural residents in relation to the importance of children's involvement in both non-consumptive and consumptive outdoor recreation.

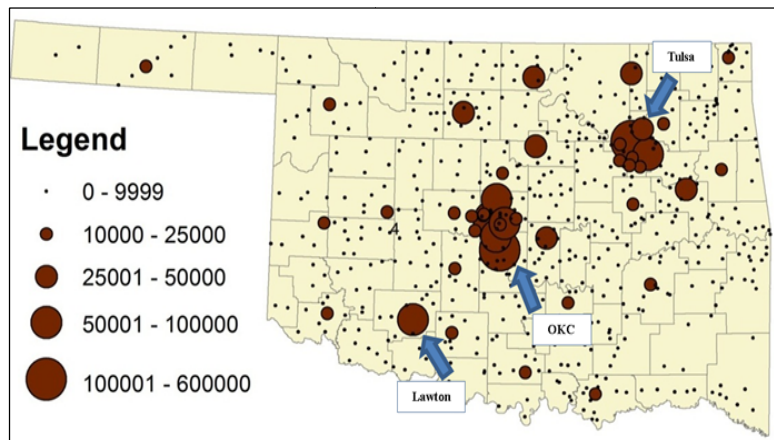
### 1.0 Introduction

Wildlife related recreation has been one of the most popular types of outdoor recreation in the United States (National Survey of Recreation and the Environment, 2000). Fishing, hunting, and wildlife watching are the common outdoor recreation activities, experiences of which rely on the health of the natural environment and wildlife biodiversity and their habitats. Since wildlife-related recreation provides opportunities for people to interact with nature and enjoy the resources within the environment, it is also considered as a potential approach to conserving wildlife habitats and changing attitudes toward human-wildlife relationships (Manfredo, Teel, & Bright, 2003).

An early study of outdoor recreation participation and attitude toward to the environment (Jackson, 1986) indicated that people who participated in appreciative /non-consumptive outdoor activities (e.g., hiking, wildlife watching) hold stronger environmental friendly attitudes when compared to participants of consumptive activities (e.g., hunting, fishing) or mechanized outdoor recreation activities (e.g., snowmobiling, mobilized boating). Among the studies that have identified the factors affecting individuals' perceptions and experiences during outdoor recreation, residential locations -- urban or rural-- has emerged as one crucial element (Heberlein & Ericsson, 2005; Hendee, 1969; Stedman & Heberlein, 2002). Moreover, socio-economic status also has been considered as a means to understand individuals' preference and reasoning for pursuing wildlife related outdoor recreation participation (Duffus & Dearden, 1990) and their consumptive behavior during wildlife-associated recreation (Zawacki, Marsinko, & Bowker, 2000).

According to the U.S. Census data, 45% of Oklahoma residents live in the three urbanized areas of Oklahoma City, Tulsa, and Lawton, each having a population greater than 50,000 (U.S. Census Bureau, 2010; Figure 1). In other words, more than half of the Oklahomans live in rural areas, where residents might be closer to the natural environment, have more access to the outdoors, and have stronger social support to hunting, fishing and other wildlife-related outdoor activities. Hendee (1969) noted differences between rural and urban residents in their outdoor recreation participation. This was based on availability of outdoor recreation opportunities, such as size and density of population, and cultural factors, such as lifestyle, value, and general perspective towards the natural environment in the living community.

Few studies have focused on Oklahomans' participation and experience in outdoor recreation. Research results indicated Oklahomans more commonly participated in consumptive and mechanized outdoor recreation activities, such as fishing, hunting, mobilized boating, and RV camping, and non-consumptive outdoor recreation, such as hiking and site-seeing (Bradley, 2012; Caneday, Liu, Chang, & Jordan, 2012; Fink, 2011). However, with a limited understanding of Oklahomans' perceptions and values related to wildlife-related outdoor recreation, differences between rural and urban residents in Oklahoma has not been investigated. Therefore, this paper aims to examine whether self-classified urban and rural residents in Oklahoma differ in their interests, experiences, and perceptions of wildlife associated recreation, and their overall experience of an annual wildlife related event. This study would provide the outdoor recreation providers in the state (e.g., Oklahoma Department of Wildlife Conservation, Oklahoma Tourism) and other land management agencies valuable information to develop recreational and educational programs based on residents' different preferences and needs.



**Figure 1.** *The Urban Areas in Oklahoma based on Population*

## 2.0 Methods

### 2.1 Data collection and sampling

The data were derived from the Oklahoma Wildlife Expo visitor assessments of 2010, 2011, and 2012. This annual survey was facilitated with an agreement and collaboration between the Oklahoma Department of Wildlife and Conservation (ODWC) and the Leisure Studies program at Oklahoma State University (OSU). The Oklahoma Wildlife Expo is the largest annual event hosted by ODWC. This expo is a three-day event to emphasize the importance of wildlife conservation and provides an opportunity for the public to experience various outdoor recreation activities, such as fishing, shooting, archery, and canoeing (Liu, Caneday, & Hawkins, 2013). The event is consistently hosted during the last week of September from Friday to Sunday at Lazy E Arena, located fifteen minutes north of Oklahoma City. Approximately 40,000 visitors per year visited the Expo, enjoying outdoor and indoor fun in an educational environment, especially for children and youth (Bradley, Tatiana, & Caneday, 2010). Traditionally, the Friday schedule was designed specifically for school groups or other educational groups, while the weekend schedule was open to the general public. This study focused on the individuals who visited the Expo during the weekends rather than the school groups on visiting on Friday of the weekend event.

Survey staff members were students from Oklahoma State University who conducted surveys from noon to 5:00 PM on the last weekend of the September in 2010, 2011, and 2012. The research staff had face-to-face interaction with adult visitors (age 18 or above) as they finished their visit and were exiting the arena area. The selected survey locations included various major exits, parking lots, and commuter shuttle stations. A convenience sample strategy was employed to reach the most on-site respondents as possible. Within the data set of the past three years, a total of 1186 individuals participated in the survey with 1162 being considered as valid cases, including 511 urban residents (44%) and 651 rural residents (56%). In that the major purpose of the study is to compare the rural-urban differences of visitors' behaviors and perceptions of wildlife-related recreation, 24 participants were eliminated from the following analysis because they did not self-classify their residential area. Beyond the 24 individuals excluded, all other respondents were included in the study in order to preserve the most information possible; therefore, the numbers of valid responds may vary from question to question.

### 2.2 Instrument

In order to examine whether self-classified urban and rural residents in Oklahoma have different perceptions of wildlife-associated recreation, the researchers included a series of five questions in the survey: (1) demographic information of research participants, including sex, race, group composition (with or without children under age of 18), and age; (2) their outdoor recreation *interest* in fishing, hunting, shooting sports, and wildlife watching, which refers to a state of curiosity or attention to a specific type of activity; (3) their outdoor recreation *experience* in fishing, hunting, shooting sports, and wildlife watching, which refers to a prior participation of a specific type of activity; (4) their perception of the *importance* of consumptive and non-consumptive outdoor recreation for educational purposes; and (5) their overall experience during ODWC Expo and anticipation of future recreation involvement. To be more specific, research participants were asked to report their recreation interests and experiences associated with various wildlife-related outdoor recreation as well as rank the importance of these experiences on a 5-point Likert scale (1 indicating "strongly disagree" to 5 indicating "strongly agree"). Research participants compared their outdoor recreation involvement in Expo-related recreation activities to previous years, specifically noting if they participate in less, more, or about the same number of activities. Further, survey participants also reported their overall evaluation of the entire event by using the common A, B, C, D to F scale.

### 2.3 Analysis

Descriptive analysis of participants' demographics was conducted to provide general information of the survey respondents. Chi-square tests and *t*-tests were the two major analytical techniques applied in the study. The similarities of demographic distribution, overall Expo experience, and future involvement between urban and rural respondents were examined by chi-square, while the differences between urban and rural residents in Oklahoma in their interests, experience, and importance of wildlife-associated outdoor recreation were analyzed by *t*-tests.

## 3.0 Results

### 3.1 Demographics

Two-thirds of the respondents were male and one-third of them were female. The majority of the participants reported being white (84%), ranged from 25 to 54 years old (73%), or had had at least one child under age of 18 (80%). Chi-square tests were further employed to investigate whether the research participants in urban or rural areas had a similar demographic distribution in their sex, race, group composition, and age. No statistically significant differences between urban or rural groups were found related to their demographic characteristics (Table 1). The results indicated that both urban and rural residents in the study had similar distributions in sex, race, family composition and age.

**Table 1.** *Demographics and Chi-square Analysis of Urban-Rural Residents*

Demographics	Frequency	%	Urban-rural comparison
Residential area			
Urban	511	44%	
Rural	651	56%	
Sex			$\chi^2 = 0.04$ ( $p=0.83$ )
Male	734	64%	
Female	428	36%	
Race			$\chi^2 = 2.83$ ( $p = 0.09$ )
White	1000	84%	
Non-white	186	16%	
Group composition			$\chi^2 = 2.74$ ( $p = 0.10$ )
With children under 18	913	21%	
Without children under 18	249	79%	
Age			$\chi^2 = 4.65$ ( $p = 0.46$ )
18-24	65	6%	
25-34	254	22%	
35-44	337	29%	
45-54	252	22%	
55-64	159	14%	
65+	85	7%	

### 3.2 Urban-Rural Comparisons of Interests, Experience, and Importance

In order to investigate whether urban and rural residency differences exist related to the perceptions and attitudes of various wildlife-related outdoor recreation, research participants were asked to report their interests, experience levels, and the educational importance of outdoor recreation involvement. A series of independent sample *t*-tests was conducted to compare the difference of interests, experience, and importance of outdoor recreation in educational purpose between urban and rural residents.

As can be seen in Table 2, among these four outdoor recreation activities investigated in the study, both rural and urban residents reported the most interest in the wildlife-related outdoor recreation activity of fishing. Hunting ( $M=3.24$ ,  $SD=1.58$ ) was the activity showing the least interest among urban residents, while shooting sports ( $M=3.51$ ,  $SD=1.48$ ) showed the least interest among rural residents. With the exception of shooting sports, rural residents scored higher in their interest in fishing, hunting, and wildlife watching when compared to urban residents. However, the only statistically significant difference of urban and rural outdoor recreation interest difference was only found to be hunting ( $p<0.001$ ).

Both urban ( $M=3.86$ ,  $SD=1.25$ ) and rural ( $M=3.99$ ,  $SD=1.18$ ) residents reported a higher experience on fishing than other wildlife-related outdoor recreation activities included in the study. Urban residents had least experience in hunting ( $M=3.00$ ,  $SD=1.59$ ), while rural residents had least experience in shooting sports ( $M=3.21$ ,  $SD=1.54$ ). Rural residents reported a higher score in their experience of all four wildlife-related outdoor recreations. However, the statistically significant differences between urban and rural residents in their experience of these recreation activities were only found in fishing ( $p=0.01$ ) and hunting ( $p<0.001$ ) category. In general, although all research participants

highly valued the importance of outdoor recreation for educational purposes, rural participants tended to report a greater importance of recreation related to education when compared to urban residents:

*T*-tests revealed statistically significant differences between urban and rural residents in relation to the importance of children's involvement in non-consumptive outdoor recreation activities ( $p=0.03$ ), such as cannoning, hiking, and wildlife watching, and consumptive outdoor recreation activities ( $p<0.001$ ), such as hunting and fishing. The difference related to level of importance of non-consumptive outdoor recreation activities was smaller between the two residency groups when compared to the difference of importance related to consumptive recreation activities.

**Table 2.** *Urban-Rural Comparison of Wildlife-Related Recreation*

Variables	Urban		Rural		<i>t</i> -test	<i>p</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Interests						
Fishing	3.86	1.25	3.99	1.18	-1.80	0.07
Hunting	3.24	1.58	3.62	1.52	-4.14	<0.001*
Shooting sports	3.59	1.77	3.51	1.48	0.38	0.71
Wildlife watching	3.71	1.28	3.79	1.31	-1.03	0.31
Experience						
Fishing	3.72	1.30	3.91	1.23	-2.59	0.01*
Hunting	3.00	1.59	3.42	1.58	-4.54	<0.001*
Shooting sports	3.10	1.56	3.21	1.54	-1.17	0.24
Wildlife watching	3.47	1.39	3.60	1.36	-1.60	0.11
Children's Educational importance						
Non-consumptive recreation	4.62	0.74	4.71	0.64	-2.12	0.03*
Consumptive recreation	4.20	1.10	4.44	0.93	-3.90	<0.001*

### 3.3 Expo Satisfaction and Future Involvement

The final section of the study was to examine if research participants' overall expo experience and their anticipation of future involvement in Expo-related outdoor recreation differed by residential area. Research participants reported their Expo experience by using an A to F scale. With 94% reporting their overall experience, the scores were noted as either A (68%) or B (26%). No statistical significant difference was found ( $\chi^2=7.149$ ,  $p=0.128$ ) between urban and rural residents' evaluations of the event. In addition, 98% of research participants were willing to spend more (50%) or maintain (48%) the same amount of time in the Expo-related recreation during the next year, regardless of where they live. Lastly, there is no statistical evidence that supports any differences between the urban and rural residents in the study ( $\chi^2=3.323$ ,  $p=0.190$ ).

### 4.0 Discussion and Conclusions

Based on the self-classified residential location of research participants (urban vs. rural area), the proportion of urban (44%) and rural (56%) respondents in the study was similar to the actual percentage of rural and urban residential distribution in Oklahoma (45% urban and 55% rural) based on 2010 census data (Census Bureau, 2010). Even though the samples of the study were not randomly selected, this group of self-identified respondents could be considered as a solid representation of the general Oklahoma population. Typical survey respondents of the Expo were white, male, and with one or more children in their group (Crews, 2007; Walker et al., 2009).

One important finding of this study is that individuals' interest scores were higher than their actual experience in all types of wildlife-related recreation activities. The gap between respondents' interest and experience in various wildlife-related outdoor recreation might be associated to various type of constraints (e.g., lack of time, financial support, etc.), personal preference, or supportive environment. Future studies investigating and identifying leisure constraints of wildlife-associated outdoor recreation in Oklahoma are needed.

Another significant finding of this study is that people living in different residential areas in Oklahoma had different levels of interest and experience in wildlife-related outdoor recreation, primarily in hunting, often considered as a "way of life" in rural areas (Stedman & Heberlein, 2001). Urban-rural differences related to fishing were only statistically significant in respondents' fishing experience but not their fishing interests. In other words, although urban residents might not be as experienced as rural residents in fishing, they still reported a high state of curiosity and attraction to fishing as an outdoor recreation activity.

This finding could be viewed as evidence that fishing would be more interesting and acceptable for urban residents than hunting. Similarly, individuals who live in rural areas tended to have higher value on both non-consumptive and consumptive outdoor recreation for educational purposes than who live in urban areas. Based on this finding, the researchers suggest that it is necessary to provide educational programs or events assisting people to understand the

great value of outdoor recreation for interaction with the environment and wildlife, especially for urban residents. The advantages of being in natural environments have been discussed in *Last Child in the Woods: Saving Children from Nature-deficit Disorder* (Louv, 2005), in which nature is considered as an essential factor for children and adults having healthy development in intellectual, physical, and emotional aspects. Outdoor recreation is a prospective approach to assist children, especially for those who live in urban areas, to reconnect with nature. Findings in this study also support the conclusion of earlier studies in that urban-rural differences exist in hunting and fishing, but not in other non-consumptive outdoor recreation activities (Hendee, 1969; Stedman & Heberlein, 2001).

Regardless of participants' residential location, most of the research participants highly valued and were satisfied with their experience at the annual wildlife expo and were willing to spend more or maintain the same amount of time in the expo-related recreation in the next year. This result could be viewed as an indication that special events and educational service or programs are able to assist the general public in understanding the importance of wildlife conservation and exploring various outdoor recreation opportunities.

## 5.0 References

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